Claims

[c1] What is claimed and desired to be secured by letters patent is as follows:

A tufted surface covering, comprising:

a base formed from particles of a polymer compound mixed with a quantity of a particle binding agent, said particle binding agent causing a portion of said particles to bind together;

said base having an upper surface and a lower surface; and

said base being tufted through with a tufting material to form a plurality of spaced apart tufting material tufts on said base upper surface and a plurality of spaced apart tufting material loops on said base lower surface.

[c2] The tufted surface covering of claim 1, wherein:

said polymer compound has thermosetting characteristics; and

following tufting, said particles are joined together at a temperature of from about 100 ° C to about 220 ° C and a pressure of up to about 2 tons per square inch.

[c3] The tufted surface covering of claim 2, wherein:

said thermosetting polymer compound is selected from a group consisting essentially of: a vulcanized natural rubber, a synthetic rubber and mixtures thereof.

[c4] The tufted surface covering of claim 3, wherein:

said thermosetting polymer compound is selected from a group consisting essentially of: nitrile-butadiene rubber, styrene-butadiene rubber, ethylene propylene difunctional monomer copolymer, ethylene-vinyl acetate copolymer, polyvinyl chloride, polychloroprene, polyurethane and mixtures thereof.

[c5] The tufted surface covering of claim 2, wherein:

said particle binding agent comprises a cross-linking agent.

[c6] The tufted surface covering of claim 5, wherein:

said cross-linking agent is selected from a group consisting essentially of: sulphur, zinc oxide, dibutyl thiurea, tellurium diethyldithiocarbonate, ethylene propylene difunctional monomer copolymer, ethylene-vinyl acetate copolymer, polypropylene and mixtures thereof.

[c7] The tufted surface covering of claim 2, wherein:

said particle binding agent comprises a polar polymer containing compound.

[c8] The tufted surface covering of claim 7, wherein:

said polar polymer containing compound is selected from a group consisting essentially of: a polyurethane, ethylene propylene difunctional monomer copolymer, ethylene-vinyl acetate copolymer, a polyamide, polypropylene, latex and mixtures thereof.

[c9] The tufted surface covering of claim 2, wherein:

said base further includes a compound selected from the group consisting essentially of a plasticizer, stearic acid, an ultraviolet radiation stabilizer, zinc oxide, carbon black, calcium carbonate, talc and mixtures thereof.

[c10] The tufted surface covering of claim 2, wherein said tufting material is selected from the group consisting essentially of: a polyamide, a polyester, a polypropylene, a natural fiber and mixtures thereof.

[c11] A tufted surface covering, comprising:

a first layer formed from particles of a polymer compound mixed with a quantity of a particle binding agent, said particle binding agent causing a portion of said particles to bind together;

said first layer having an upper surface and a lower surface;

said first layer being tufted through with a tufting material to form a plurality of spaced apart tufting material tufts on said first layer upper surface and a plurality of spaced apart tufting material loops on said first layer lower surface;

a second layer having an upper surface and a lower surface, said second layer including particles of a polymer mixed with a quantity of a particle binding agent; and

said particle binding agent causes a portion of said first layer lower surface particles to join together with a portion of said second layer upper surface particles to seal said tufts and said loops in said first layer.

[c12] The tufted surface covering of claim 11 wherein:

said polymer compounds have thermosetting characteristics; and

following tufting, said particles are joined together at a temperature of from about

100 ° C to about 220 ° C and a pressure of up to about 2 tons per square inch.

[c13] The tufted surface covering of claim 12, wherein:

each of said thermosetting polymer compounds is selected from a group consisting essentially of: a vulcanized natural rubber, a synthetic rubber and mixtures thereof.

[c14] The tufted surface covering of claim 13, wherein:

each of said thermosetting polymer compounds is selected from a group consisting essentially of: nitrile-butadiene rubber, styrene-butadiene rubber, ethylene propylene difunctional monomer copolymer, ethylene-vinyl acetate copolymer, polyvinyl chloride, polychloroprene, polyurethane and mixtures thereof.

[c15] The tufted surface covering of claim 12, wherein:

each of said particle binding agents comprises a cross-linking agent.

[c16] The tufted surface covering of claim 15, wherein:

each of said cross-linking agents is selected from a group consisting essentially of: sulphur, zinc oxide, dibutyl thiurea, tellurium diethyldithiocarbonate, ethylene propylene difunctional monomer copolymer, ethylene-vinyl acetate copolymer, polypropylene and mixtures thereof.

[c17] The tufted surface covering of claim 12, wherein:

each of said particle binding agents comprises a polar polymer-containing compound.

[c18] The tufted surface covering of claim 17, wherein:

each of said polar polymer-containing compounds is selected from the group consisting essentially of: polyurethane, ethylene propylene difunctional monomer copolymer, ethylene-vinyl acetate copolymer, a polyamide, polypropylene, latex and mixtures thereof.

[c19] The tufted surface covering of claim 12, wherein:

each of said first layer and said second layers further includes a compound selected from the group consisting of: a plasticizer, stearic acid, an ultraviolet radiation stabilizer, zinc oxide, carbon black and calcium carbonate, talc and mixtures thereof.

[c20] The tufted surface covering of claim 12, wherein said second layer includes a blowing agent.

[c21] The tufted surface covering of claim 12, wherein said second layer lower surface includes a plurality of spaced indentations for reducing a weight of the covering.

[c22] The tufted surface covering of claim 12, wherein said tufting material is selected from the group consisting essentially of: a polyamide, a polyester, a polypropylene, a natural fiber and mixtures thereof.

[c23] The tufted surface covering of claim 12, wherein said first and second layers each include a plurality of spaced apart apertures for draining a fluid from said surface covering.

[c24] A method of making a tufted surface covering, comprising the steps of:

providing a base formed from particles of a thermosetting polymer compound mixed with a quantity of a particle binding agent, said particle binding agent causing a portion of said particles to bind together;

said base having an upper surface and a lower surface; and

threading a needle with a tufting material and inserting the needle through said base at spaced intervals to form a series of tufting material tufts on said base upper surface and a series of tufting material loops on said base lower surface.

[c25] The method according to claim 24, said particle binding agent comprising a cross-linking agent, and including the step of:

after step (c), subjecting said base to a temperature of from about 100 ° C to about 220 ° C and a pressure of up to about 2 tons per square inch to join said particles together.

[c26] The method according to claim 25, including the steps of:

coating said base lower surface and loops with particles of a polymer compound mixed with a quantity of a binding agent to form a second layer; and

permitting a portion of said base particles to join together with a portion of said second layer particles and seal said tufts and said loops in said first layer.

[c27] The method according to claim 26, each of said particle binding agents comprising a cross-linking agent and including the step of:

after step (b), subjecting said covering to a temperature of from about 100 ° C to about 220 ° C and a pressure of up to about two tons per square inch to cause a portion of said base particles to join together with a portion of said second layer particles.

[c28] The method according to claim 27, said second layer further including an upper surface and a lower surface, and including the step of:

heating said covering from said second layer lower surface.

[c29] The method according to claim 28, including the step of:

while heating said covering, at the same time cooling said tufts to protect the tufting material from the heat.